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## VINCENT J. CAPONE, Jr., M.Sc.

### EDUCATION

- M.Sc., Marine Science (Minor in Exp. Statistics), 1986, Louisiana State University, LA
- B.Sc., Marine Biology (Minor in Geology), 1982, Fairleigh Dickinson University, NJ
- Advanced Degree Courses, 1981, the West Indies Laboratory, U.S. Virgin Islands

### EXPERIENCE SYNOPSIS

Mr. Capone's experience spans over 30 years of worldwide hydrographic and underwater search and survey operations. He is an expert in side scan sonar search operations/image interpretation and regularly conducts training seminars for the U.S. Navy as well as law enforcement and commercial clients. His expertise also includes both single and multi-beam hydrographic surveys, ROV operations, as well as magnetometer and subbottom surveys utilizing all types of navigation systems including USBL. Mr. Capone has acted as an expert witness and technical expert on the aforementioned topics, having conducted numerous sonar and hydrographic surveys.

He is a noted instructor of sonar systems as well as an expert in sonar image interpretation and the many types of sonar processing and acquisition softwares. He is the author of over ten marine technology training DVDs including the Black Laser 2<sup>nd</sup> edition *Not in the Manual Guide*<sup>®</sup> to *Sonar Image Interpretation* of which over 700 copies are in circulation worldwide. He is a special consultant to the U.S. Navy, teaching sonar analysis techniques and mine identification. That training includes developing a military versions of his Black Laser Learning<sup>®</sup> sonar training program on DVD which is being distributed to all forward units. Vince is also been instrumental in the latest Navy online sonar training by providing sonar analysis techniques for incorporation into the computerized training program. He was recently awarded a Navy contract to develop a new training program for synthetic aperture sonars as well as consulting on sonar operations utilizing UUVs (unmanned underwater vehicles).

Mr. Capone assisted with the recovery of Apollo rocket motors from over 14,000 fsw and supported the U.S. Navy supervisor of salvage with debris search operations for the space shuttle *Columbia*. In 2004, he located the previously undiscovered *U-215* German U-Boat for National Geographic International's "Sea Hunters" TV series. In 1990, Mr. Capone located the Lake George *Radeau*, America's oldest intact warship which is now an underwater historic park.

Mr. Capone has worked with organizations such as the Federal Bureau of Investigation, the U.S. Environmental Protection Agency, the U.S. Department of Justice, the U.S. Army Corps of Engineers, NOAA (National Oceanic And Atmospheric Administration), the U.S. Navy, the Irish Navy, the South Korean Navy and the Israeli Navy as well as numerous legal and commercial entities in a wide variety of underwater investigations. He has also been a sonar instructor for the Royal Canadian Mounties, East Baton Rouge Sheriff's office, Suffolk County Marine Police, Medicine Hat Aquatic Rescue Team and other law enforcement personnel.

## PROFESSIONAL EXPERIENCE

**January 2004-Present: *Principal, Black Laser Learning, Inc*<sup>®</sup>. Hockessin, DE**

Conduct training seminars and provide DVD training programs for sonar, marine geophysical and hydrographic operations. Conduct and manage marine field operations.

**January 2001-2009: *Principal, Barkentine, Inc., Landenberg, PA***

Provide planning, logistics, execution, supervision and expert analysis of sonar and hydrographic operations including expert sonar mosaic data processing.

**January 1994-2003: *Staff Associate, Marine Operations, Envirosan, Inc., Lancaster, PA***

Supervise marine geophysical investigations for private, state, federal, commercial, and industrial clients throughout the United States. Perform land-based GPR, EM, magnetic, and acoustic investigations.

**May 1990-2000: *Principal, Marine Search & Survey, Princeton, NJ/ Wilmington DE***

Founded and directed firm specializing in underwater search operations using various sonar, remotely operated vehicles and navigation systems. Services included location and documentation of historic shipwrecks, underwater search OPS, hydrographic surveys, and environmental/ecological sampling.

**June 1988-1990: *Assistant Project Manager, Oceaneering, Falls Church, VA***

Worldwide search and survey operations for commercial clients and U.S. Navy SUPSALV.

**July 1985-April 1988: *Marine and Aquatic Sciences Division Manager, Kaselaan & D'Angelo Associates, Inc., Haddon Heights, NJ.***

Developed and managed marine and aquatic sciences division. Responsible for marketing, bid preparation, field operations, and equipment maintenance.

**Sept-Dec. 1981: *West Indies Laboratory, St. Croix U.S. Virgin Islands***

## EXPLORER'S CLUB FLAG EXPEDITIONS

- 2014: RJ Walker Shipwreck Survey Project, Flag 132.
- 2013: Apollo F-1 Search & Recovery Project, Flag 132.
- 2012: Coastal Oregon Shark Habitat and Population Survey and Hubbard Underwater Radio Expedition, Flag 60.
- 1991: "*Land Tortoise Radeau Shipwreck Survey*" for "videography and photography using a remotely-operated vehicle and divers who will measure and further explore the deep

water shipwreck".

- 1990: Underwater Exploration Expedition of Sunken Bateaux at Lake George.
- 1990: USS Monitor Expedition, Flag 132.

## **KEYNOTE & EDUCATIONAL PRESENTATIONS**

- High Visibility Projects such as the Apollo F1 Recovery for motivating students, Stockton College, MTS and New Jersey Marine Educators March, 2014
- Apollo F1 Recovery Project, University of Delaware, March, 2014
- Apollo F1 Recovery Project, Boston Sea Rovers, March, 2014
- Hunting Submarines, Boston Sea Rovers, March, 2011.
- Submerged Treasures: A Quest of Serendipity and Perseverance, Mid-America Orthopedic Society, April 2010.
- Surveying the Queen of the Antilles: Sea & Learn Saba 2008

## **NOTED FIELD OPERATIONS**

- Drone Search & Recovery, 4000 fsw, San Diego, Ca - 2014.
- Apollo F1 Engine Recovery, 14,400 fsw, Western Atlantic - 2013
- U-215 Search and Identification, 300 fsw, Georges Bank - 2004.
- Space Shuttle *Columbia* Debris Search, <100 ft, Toledo Bend Reservoir, 2001.
- Navy Aircraft Search OPS, 11,000 fsw, Western Atlantic, 1989.

## **LIVE TV APPEARANCES**

- CNN's Outfront with Erin Burnett, April 17, 2014 "Search for MH 370"

## **SELECTED FILM & DOCUMENTARY EXPERIENCE**

- Apollo F 1 Rocket Engine Recovery - Distribution to be determined.
- Camp X, Canadian TV
- Search for Alligator Jr. (Never aired)

- Dive Detectives Smithsonian Channel
  - Ghost Ship (Story Consultant Only)
  - Submarine Graveyard (Story Consultant Only)
  
- The Sea Hunters, National Geographic International
  - Lost at Sea: The Great U.S. Navy Airships *Akron & Macon*
  - The Search for the Early Submarines
  - Still on Patrol -The Search for Hitler's U-Boat *215*
  - *U-215 & Alexander Macomb*
  - The Search for the Avro Arrow Test Flight Models
  
- The Lost *Radeau*: North America's oldest intact warship

## **AWARDS**

- Citation of Merit, International Explorer's Club, 2014
- Certificate of Achievement, Bateau Below, 1994
- Explorer of the Year, International Explorers Club, Philadelphia Chapter, 1990
- AALGBRT Achievement Award, 1989

## **EXPERT WITNESS TESTIMONY**

1) *MV Athos I* vs Citgo Asphalt Refining – US. District Court  
 Expert Witness - Tides, Hydrographic Surveys, Sonar Surveys and Echosounder Data

2) State of NY vs Allen S. Gold - Suffolk County New York  
 Expert Witness - Underwater Search OPS, Set and Drift

## **EXPERT TECHNICAL ANALYSIS/ FIELD INVESTIGATIONS (ABRIDGED)**

- 1) *MV Stena Primorsk* - Grounding Hudson River
- Field Supervision Hydrographic/Sonar Surveys (2013)
  - Analysis and Reporting of Collected Data
  - Independent Maritime Consulting, South Port CT and Northern Marine Management, UK

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- 2) *MV Harrier* - Grounding
    - Analysis of USACE Survey Data (2011-2013)
    - Analysis of Ship's Navigation Data
    - Independent Maritime Consulting, South Port CT
  - 3) Optical Communications Group vs *M/V Ambassador* – U.S. District Court
    - Cable Extraction
    - Analysis of sonar/ship data, and interview commercial divers regarding cable extraction. (2010/2011)
    - Rubin, Fiorella and Friedman, New York, NY
  - 4) *MV Athos I* vs Citgo Asphalt Refining – U.S. District Court
    - Analysis of tide, single beam hydrographic survey, multi-beam survey, ship's echosounder data and side scan sonar data. (2005-2010)
    - Montgomery, McCracken, Walker & Rhodes, Philadelphia, PA
  - 5) *M/V Jo Kashi* – Dock Damage, Struck Westway Terminal Philadelphia
    - Analysis of USACE Survey data (2007)
    - Montgomery, McCracken, Walker & Rhodes, Philadelphia, PA
  - 6) *M/V Spar Cetus* – Grounding Delaware River
    - Analysis of environmental and current data (2008)
    - Independent Maritime Consulting, South Port CT
  - 7) *MV Fase D* – Struck Bottom
    - Analysis of USACE Survey Data (2005)
    - Independent Maritime Consulting, South Port CT
  - 8) McAllister Barge – Struck Diamond Reef Hudson River
    - Side Scan Sonar and Hydrographic Survey (2005)
    - Tisdale & Lennon, Southport, CT
  - 9) *M/V A. V. Kastner* – Collided with Norfolk Dredging Tug and Barges
    - C&D Canal Arnold Point, MD
    - Analysis of USACE Side Scan Sonar and Hydrographic Survey Data (2002)
    - Ober Kaler, Baltimore, MD

## AUTHORED TRAINING PROGRAMS ON DVD

- *EdgeTech 850 kHz Sonar for US Navy UUV Operators*  
Black Laser Learning, Inc.® Hockessin, DE 2014
  
- *Synthetic Aperture Sonar for US Navy UUV Operators*  
Black Laser Learning, Inc.® Hockessin, DE 2014
  
- *Underwater Search OPS with the Humminbird Side Imaging Sonar*  
Black Laser Learning, Inc.® Hockessin, DE 2013
  
- *Introduction to Synthetic Aperture Sonar for U.S. Navy UUV Operators*  
Black Laser Learning, Inc.® Hockessin, DE 2011
  
- *Not in the Manual Guide® to Autonomous Underwater Vehicles*  
Black Laser Learning, Inc.® Hockessin, DE 2010
  
- *2<sup>nd</sup> Ed. Not in the Manual Guide® to Side Scan Sonar Image Interpretation*  
Black Laser Learning, Inc.® Hockessin, DE 2007
  
- *Not in the Manual Guide® to Military Side Scan Sonar Image Interpretation*  
Black Laser Learning, Inc.® Hockessin, DE 2007
  
- *Not in the Manual Guide® to Subbottom Profiler Surveys*  
Black Laser Learning, Inc.® Hockessin, DE 2006
  
- *Not in the Manual Guide® to Side Scan Sonar Image Interpretation*  
Black Laser Learning, Inc.® Hockessin, DE 2006
  
- *Not in the Manual Guide® to Sonar and Magnetometer Surveys*  
Black Laser Learning, Inc.® Hockessin, DE 2005
  
- *Not in the Manual Guide® to Sonar & MAG for Underwater Archaeologists and Cultural Resource Managers.*  
Black Laser Learning, Inc.® Hockessin, DE 2005

## TECHNICAL INSTRUCTOR/SME TRAINING EXPERIENCE

### 2014

- June 2014: *Advanced Side Scan Sonar Image Processing*, Stockton College, Pomona, NJ.
- May 2014: *Side Scan Sonar Theory & Mine Identification*, U.S. Navy Mine Warfare Center, San Diego, CA.
- May 2014: *Klein 3000 Side Scan Sonar Operations and Image Interpretation and Post Processing for Hydrographers* U.S. Navy International Hydrographers Course (IHMEP), Biloxi, MS
- March 2014: *Sonar Theory & Mine Identification*, U.S. Navy Mine Warfare Center, San Diego, CA.
- Jan 2014: *Sonar Theory & Mine Identification*, U.S. Navy Mine Warfare Center, San Diego, CA.
- Jan 2014: *Drowning Victim Search OPS with EdgeTech 4125 Side Scan Sonar*, Slaughter Beach Aquatic Rescue, Milford, DE

### 2013

- Nov 2013: *Sonar & Bathymetric Survey Techniques with HYPACK and Marine Sonic Technology HDS sonar*, U.S. Navy SeeBees, Port Hueneme, CA.
- Oct 2013: *Sonar Theory & Mine Identification*, U.S. Navy Mine Warfare Center, San Diego, CA.
- May 2013: *Klein 3000 Side Scan Sonar Operations and Image Interpretation and Post Processing for Hydrographers* U.S. Navy International Hydrographers Course (IHMEP), Biloxi, MS
- May 2013: *Search Operations with the Humminbird Side Imaging Sonar*. Medicine Hat Aquatic Rescue, Medicine Hat, Alberta
- May 2013: *Abbreviated EdgeTech 850 kHz UUV Military Side Scan Sonar Image Interpretation*, NOMWC, Panama City, FL
- May 2013: *EdgeTech 850 kHz/COIN Military UUV Side Scan Sonar Image Interpretation*, SPAWAR San Diego, CA
- Apr. 2013: *EdgeTech 850 kHz/COIN Military UUV Side Scan Sonar Image*

*Interpretation*, SPAWAR San Diego, CA

- Jan. 2013: *EdgeTech 850 kHz Military Side Scan Sonar Image Interpretation*, SPAWAR San Diego, CA

## **2012**

- Dec 2012: *Operation and Optimization of Humminbird Sonar for Search OPS*. Stockton State College, Pomona, NJ
- Oct. 2012: *EdgeTech 850 kHz Military Side Scan Sonar Image Interpretation*, SPAWAR San Diego, CA.
- July 2012: *Command Level Side Scan Sonar Search operations and Introduction to Image Interpretation*, Submarine Rescue Systems Command, Diego, CA
- June 2012: *EdgeTech 850 kHz Military Side Scan Sonar Image Interpretation*, SPAWAR San Diego, CA
- May 2012: *EBSS Hydrographic Surveys with Post Processing in Surfer and Side Scan Sonar Operations and Advanced Image Interpretation*, U.S. Navy Underwater Construction Team One, Virginia Beach, VA
- May 2012: *Side Scan Sonar Operations and Image Interpretation and Post Processing for Hydrographers* U.S. Navy International Hydrographers Course, Biloxi, MS
- Mar. 2012: *Sonar – Subbottom – MAG – AUV- Data Processing Training Program*, U.S. Navy NFESC, Port Hueneme, CA

## **2011**

- Oct. 2011: *Marine Sonic HDS Sonar Operation, Image Interpretation and Post Processing*, U.S. Navy Underwater Clearance Team Two, Port Hueneme, CA
- Sept. 2011: *Sonar – Subbottom – MAG – AUV- Data Processing Training Program*, U.S. Navy NFESC, Port Hueneme, CA
- June 2011: *Side Scan Sonar/Magnetometer/Scanning Sonar: Operations and Image Interpretation*. Mobile Diving and Salvage Unit Two, Norfolk, VA
- June 2011: *Scanning Sonar for Bridge Inspection Training*. WJ Castle & Assoc. Hainsport, NJ.
- May 2011: *Side Scan Sonar Operations and Image Interpretation and Post Processing for Hydrographers* U.S. Navy International Hydrographers Course, Biloxi, MS



- Apr. 2011: *Geophysics for Marine Surveyors*. C &C Technologies/University of Louisiana, Lafayette, LA
- Mar. 2011: *Sonar – Subbottom – MAG – AUV- Data Processing Training Program*, U.S. Navy NFESC, Port Hueneme, CA
- Feb. 2011: *AUV and Towed Side Scan Sonar Data Interpretation Training*. Black Laser Learning, University of Delaware.
- Jan. 2011: *AUV/UUV Sonar Data Interpretation Training*. US Navy, San Diego, CA
- Jan. 2011: *Geophysics for Marine Surveyors*. C &C Technologies/University of Louisiana, Lafayette LA

## **2010**

- Dec. 2010: *Geophysics for Marine Surveyors*. C &C Technologies/University of Louisiana, Lafayette, LA
- Nov. 2010: *Geophysics for Marine Surveyors*. C &C Technologies/University of Louisiana, Lafayette, LA
- Oct. 2010: *Side Scan Sonar and Single Beam Survey Training* River Diving & Salvage, Bloomsdale, MO
- July 2010: *Side Scan Sonar Operations and Image Interpretation for Law Enforcement* Royal Canadian Mounted Police, Winnipeg, Canada
- June 2010: *Side Scan Sonar Operations and Image Interpretation and Post Processing for Hydrographers* U.S. Navy International Hydrographers Course (IHMEP), Biloxi, MS
- May 2010: *Side Scan Sonar Operations and Image Interpretation for EOD/UUV Mine Hunting OPS*. U.S. Navy, Panama City, FL
- May 2010: *Sonar – Subbottom – MAG – AUV- Data Processing Training Program*, U.S. Navy NFESC, Port Hueneme, CA
- Feb. 2010: *Side Scan Sonar Operations and Image Interpretation*, 3-Day Black Laser Course, Annapolis, MD

## **2009**

- Jan. 2009: *Side Scan Sonar Image Interpretation and Mine Identification Training* with Emphasis on Harbor Operations U.S. Navy SPAWAR, San Diego, CA
- Jan. 2009: *Side Scan Sonar Image Interpretation and Search Operations Training* U.S.

Homeland Security, Charleston, SC

## **2008**

- Dec. 2008: *Sonar/Subbottom/Data Processing Training Consultant*, U.S. Navy NFESC, Port Hueneme, CA
- May 2008: *Principles of Sonar for Mine Hunting OPS and Mine ID*, SPAWAR, San Diego, CA
- Apr. 2008: *Sonar/Subbottom/Data Processing Training Consultant*, U.S. Navy NFESC, Port Hueneme, CA
- Feb. 2008: *Side Scan Sonar Image Interpretation Course*, Annapolis, MD

## **2007**

- Oct. 2007: *Sonar/Subbottom/Data Processing Training Consultant*, U.S. Navy NFESC, Port Hueneme, CA
- Sept. 2007: *Sonar Training/ Mine Identification Consultant*, EOD8/MDSU-2 U.S. Navy SPAWAR, Norfolk, VA
- Sept. 2007: *Chesapeake Tech Sonar Mosaic Software Instructor*, EOD8/MDSU-2 U.S. Navy SPAWAR, Norfolk, VA
- Aug. 2007: *Sonar Training/ Mine Identification Consultant*, U.S. Navy SPAWAR, San Diego, CA
- Apr. 2007: *Sonar/Mosaic Processing Training Consultant*, U.S. Navy NFESC, Port Hueneme, CA
- Jan. 2007: *Sonar Training Consultant*, U.S. Navy SPAWAR, San Diego, CA

## **2006**

- Nov. 2006: *Sonar Training Consultant*, U.S. EPA Chief Scientists – OSV BOLD, Miami, FL
- Aug. 2006: *Magnetometer Training Consultant*, U.S. Navy MDSU2, Little Creek, VA

- May 2006: *Magnetometer Training Consultant*, East Carolina University, Greenville, NC

## **2005**

- May 2005: *Sonar Training Consultant*, New ASD Boat-Sonar Deployment Evaluation and Field Trials U.S. Navy EOD Unit 8 and U.S. Navy MDSU2 at Little Creek, VA

## **2004**

- Feb. 2004: *Sonar Training Consultant*, U.S. Navy EOD Unit 8, Sigonella, Sicily.
- Oct. 2004: *Sonar Training Consultant*, U.S. Navy Mobile Diving and Salvage Unit 2, Norfolk, VA.

## **2003**

- Apr. 2003: *Sonar Training Consultant*, U.S. Army Corps of Engineers Little Rock District Arkansas.

## **2002**

- Apr. 2002: *Sonar Training Consultant*, Petrobras and Brazilian Navy, Salvador Brazil

## **2001**

- Mar. 2001 - 2005 *Sonar Training Consultant*, U.S. Army Corps of Engineers-Philadelphia, Baltimore, Mobile, St Louis, Pine Bluff and New Orleans Districts.
- Mar. 2001: *Sonar Training Consultant*, OSV Anderson, U.S. Environmental Protection Agency.

## **2000**

- June 2000: *Sonar Training Consultant*, Navy Mine Warfare Counter Measures Unit, Panama City, FL.
- Jan. 2000 & 2002: *Sonar Training Consultant*, Korean Navy.

## **1987-1999**

- Dec. 1999: *Sonar Training Consultant*, Irish Naval Diving Unit.
- July/Aug 1997: *Sonar Training Consultant*, U.S. Navy-NAVOCE Persian Gulf OPS.
- Spring 1996: *Adjunct Professor*, Marine Archaeology, Dowling College.

- Feb. 1994: *Sonar Training Consultant*, U.S. Navy EOD 17, Whidby Island, WA
- Aug. 1992: *Sonar Training Consultant*, Israeli Navy.
- Oct. 1991: *Location of Human Remains*, Federal Bureau of Investigation, New York Office.
- Fall 1991: *Introduction to Marine Science* – Adult Continuing Education, East Brunswick School District.
- July 1987-1994: *Scientific Instructor*, Marine Studies Program, Lakeville, CT. Instructor in marine search and survey techniques.

### **TEACHING EXPERIENCE (COLLEGE & UNIVERSITY)**

- Stockton College Guest Lectures, *Marine Archaeology*, 2005 through 2011.
- University of Louisiana, *Marine Geophysics for Surveyors*. Fall 2010 & Spring 2011.
- Dowling College, *Marine Archaeology*. Spring, 1996.
- Isle of Shoals Marine Laboratory, Cornell University, *Marine Pollution*. Summer 1993 & 1994.

### **SCIENTIFIC PUBLICATIONS AND PRESENTATIONS**

- Nicole A. Raineault, Arthur C. Trembanis, Douglas C. Miller, Vincent J. Capone "Interannual Changes in Seafloor Surficial Geology at an Artificial Reef Site on the Inner Continental Shelf," *Continental Shelf Research*, March, 2013
- Nicole A. Raineault, Arthur C. Trembanis, Douglas C. Miller, Vincent J. Capone "Effects of Artificial Reef Structures on the Geology and Biology of the Seafloor: Example from the Inner Continental Shelf off Delaware," *Coastal Environment Research Federation*, November, 2011.
- Capone, Vincent J., "Automated Klein 3000 Target Class Posting and Streamlined Integration of Side Scan Sonar Data into AutoCAD/GIS," *Underwater Intervention*, 2003.
- Keith, D.J., Capone, V.J., Cook, G.S., Carey, D.N., Wiley, D.A., and Fish, J.P. "Target Detection and Mapping of Aquatic Hazardous Waste Sites in Massachusetts Bay, Utilizing Side Scan Sonar." *Oceans International Conference*, 1992.
- Wiley, D.A., Capone, V.J., Carey, D.A., and Fish, J.P. "Location Survey and Condition

Inspection of Waste Containers at the Massachusetts Bay Industrial Waste Site and Surrounding Areas." Unpublished Report submitted to USA-Region I by the International Wildlife Coalition, 59 pp. 1992.

- Capone, Vincent. "Examining Side Scan Sonar At Lake George - The Radeau Sonograph." The Lake George Nautical Newsletter, June, 1992.
- Capone, Vincent. "Searching through the Sewer Outfall of San Francisco Bay (Utilizing Side Scan Sonar)." Sea Technology, 1988, 29 (8).
- Capone, Vincent. "Synopsis of ROV Technology," Bateaux Below, December, 1988, Issue No. 3.
- Capone, Vincent. J., "Brown Shrimp Catch in Louisiana's Wing-Net Fishery: Effects of Moon Phase, Time of Day, Current and Effort." American Fisheries Society, 1986 Convention, Providence, R.I.

## **PROFESSIONAL REGISTRATIONS AND AFFILIATIONS**

- Fellow, International Explorers Club
- Board of Directors, Batteau Below, Inc.
- Member, Hydrographic Society
- Frequent Invited Lecturer or Instructor at Universities and Symposia

## **CONTINUING EDUCATION COURSES**

- EdgeTech 6205 Multibeam Training, June 2014
- Hydrolite Factory Training, June, 2013
- UUV Technology Course ARL-Penn State, October, 2012
- Gavia AUV Boot Camp Portsmouth, NH August, 2012
- SeeByte COIN Sonar Display & Processing Software, San Diego, CA June 2012
- Marine Sonic Technology HDS Sonar Course, October, 2011
- QTC Acoustic Sediment Classification Seminar, June, 2011
- ONR Technology Review U.S. Navy, Panama City, January, 2011
- AUV Boot Camp - University of DE and UNH, June, 2010
- Chesapeake Technologies Training Seminar, July, 2010

- ONR Technology Review U.S. Navy, Panama City, January, 2010
- HYPACK Training Seminar, January, 2008
- Chesapeake Technologies Training Seminar, December, 2007
- EdgeTech Sonars – EdgeTech Plymouth, MA July, 2007
- Multi-beam Surveys – U.S. Hydrographic Society Norfolk, VA 2007
- OIC GeoDas Software Training, Honolulu Hawaii, 1999.
- CODA Technologies Training, 1998
- Hydrographic Surveying for Nautical Charting, NOAA/Old Dominion University, 1998
- Reson Multibeam Training, San Diego CA., 1998
- HYPACK Survey Software, Coastal Oceanographics, 1997
- ELAC/Allied Signal Multi-beam Training, 1996
- Triton Software Factory Training, 1996
- Sub Surface Interference Radar, Geophysical Survey Systems, Inc., 1993
- Klein Side Scan Sonar, Theory & Interpretation, 1990
- OSHA 40-hour Hazardous Waste Site Workers Training with Annual 8-hour Updates, 1988
- Certified Underwater Archaeological Research Assistant, 1987
- Small ROV OPS Training, Benthos, Inc, 1986
- Klein Side Scan Sonar, Theory & Interpretation, 1986
- Maritime Industries, Competent Person, OSHA, 1983
- Certified Advanced & Scientific Diver, 1981
- Certified Diver, 1976

## **MARINE ARCHAEOLOGICAL FIELD EXPERIENCE**

- Archaeological Diver Survey of the Lake George *Radeau*
- Archaeological Diver Survey of the Lake George *Batteau*
- ROV Video Survey of the Lake George *Radeau*
- *Sonar Survey of Alligator, Florida Keys*

- ROV Video Survey of the Lake George Batteau
- ROV Video Reconnaissance of the *O.J. Walker*, Lake Champlain
- Remote Sensing Survey of the USS Monitor
- ROV Video Survey of the O. J. Walker, Lake Champlain